REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-8 are pending. Claims 1 and 6 are amended, non-limiting support for which can be found at least in Figure 15 and the associated discussion at pages 12-14 of the specification. No new matter is introduced.

In the outstanding Office Action, Claims 1-4 and 6-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Liu ("AOTO: Adaptive Overlay Topology Optimization in Unstructured P2P Systems", December 4, 2003, hereafter "Liu") in view of Hsu (U.S. Patent No. 6,363,319, hereafter "Hsu") and Huang (U.S. Patent Application Publication No. 2004/0264466, hereafter "Huang"); and Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Liu, Hsu, and Huang in further view of Traversat et al. (U.S. Patent Application Publication No. 2002/0147771, hereafter "Traversat").

Initially, Applicants gratefully acknowledge the courtesy of Examiner Nickerson in holding a telephonic interview with Applicants' representative on March 22, 2010. During the interview, the outstanding issues in this case were discussed as summarized below and in the Interview Summary, which the Examiner has made of record. Examiner indicated that the claim amendments presented herein appear to overcome the rejections in the outstanding Office Action. However, no agreement was reached pending further search and consideration by the Examiner.

In reply to the rejection of Claims 1-4 and 6-8 as being unpatentable over Liu, Hsu, and Huang, Claim 1 is amended to recite, *inter alia*, a node device which newly joins a network formed by a first existing node and a second existing node where the node device includes

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> a connection establisher unit configured to establish a connection with *only the first existing node* when the first total metric value is smaller than the second total metric value, and configured to establish a connection with *only the second existing node* when the second total metric value is smaller than the first total metric value,
>
> wherein when calculating the first total metric value, the total metric value calculator calculates a first weighted metric value as a product of a metric value of the first virtual connection to the first existing node and a first weighting coefficient representing a number of adjacent nodes to the first existing node, the total metric value calculator also calculates a second weighted metric value as a product of a metric value of a route to the second existing node via the first virtual connection and the first existing node and a second weighting coefficient representing a number of adjacent nodes to the second existing node, and *the first total metric value is calculated as a sum of the first weighted metric value and the second weighted metric value divided by the sum of the first and second weighting coefficients*, and
>
> when calculating the second total metric value, the total metric value calculator calculates a third weighted metric value as a product of a metric value of the second virtual connection to the second existing node and the second weighting coefficient, the total metric value calculator also calculates a fourth weighted metric value as a product of a metric value of a route to the first existing node via the second virtual connection and the second existing node and the first weighting coefficient, and *the second total metric value is calculated as a sum of the third weighted metric value and the fourth weighted metric value divided by the sum of the first and second weighting coefficients*. (Emphasis added.)

The primary reference, Liu, describes an adaptive overlay topology optimization method used to optimize unstructured peer-to-peer network.[1] More specifically, Liu describes an overlay multicast tree in which each of the nodes in the network probes its immediate logical neighbors to determine a cost of connecting to each of these logical neighbors.[2] Each node then determines which of its neighbors will receive flooding messages

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[1] Liu at page 4187, the second full paragraph on the right-hand side.
[2] Liu at page 4187, Section II(B).

and which will not based on the multicast tree, and which neighbors will not (i.e. non-flooding neighbors.)[3]

However, Liu does not describe that a node in the network connects to only one other node in the network. Instead, Liu describes that a node (i.e. node 1) retains its connections even with non-flooding neighbors (i.e. nodes 3 and 4).[4] Conversely, amended Claim 1 recites a connection establisher unit that establishes a connection with *only the first existing node* when the first total metric value is smaller than the second total metric value, and establishes a connection with *only the second existing node* when the second total metric value is smaller than the first total metric value. Therefore, Liu fails to disclose the claimed connection establisher unit, and neither Hsu nor Huang cure this deficiency. As such, no combination of Liu, Hsu, and Huang describe every feature in amended Claim 1, and amended Claim 1, together with its corresponding dependent claims, is believed to be in condition for allowance.

Further, no combination of Liu, Hsu, and Huang describes first total metric value is calculated as a sum of the first weighted metric value and the second weighted metric value *divided by the sum of the first and second weighted coefficients*, and also recites that the second total metric value is calculated as the sum of the third weighted metric value and the fourth weighted metric value *divided by the sum of the first and second weighting coefficients*, and recited in amended Claim 1. Therefore, amended Claim 1 is believed to be in condition for allowance, together with its corresponding dependent claims, for this additional reason.

Moreover, amended Claim 6 recites features substantially similar to those recited in amended Claim 1 and is believed to be in condition for allowance for substantially similar

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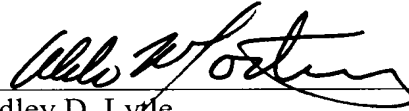[3] Liu at pages 4187-4188, Section II(B).
[4] Id.

reasons together with any claim depending therefrom. Accordingly, it is respectfully

requested that the rejection of Claims 1-4 and 6-8 under 35 U.S.C. § 103(a) be withdrawn.

As the rejection of Claim 5 relies upon Huang for describing the above-distinguished

features, and the above-distinguished features are not disclosed or suggested in Huang alone

or in combination with any other art of record, it is respectfully submitted that a *prima facie*

case of obviousness has not been presented. Accordingly, it is respectfully requested that the

rejection of Claim 5 under 35 U.S.C. § 103(a) be withdrawn.

For the reasons discussed above, no further issues are believed to be outstanding in

the present application, and the present application is believed to be in condition for formal

allowance. Therefore, a Notice for Allowance for Claims 1-8 is earnestly solicited.

Respectfully submitted,

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